a) forming a cleavage structure comprising:

i) a synthetic target nucleic acid, said synthetic target nucleic acid comprising a first region and a second region, said second region downstream of and contiguous to said first region;

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ii) a first nucleic acid molecule, wherein at least a portion of said first nucleic acid molecule is completely complementary to said first region of said first target nucleic acid;

iii) a second nucleic acid molecule comprising a 3' portion and a 5' portion, wherein said 5' portion is completely complementary to said second portion of said target nucleic acid;

b) cleaving said cleavage structure with a thermostable 5' nuclease so as to generate non-target cleavage product; and

c) detecting the cleavage of said cleavage structure.

Please add the following claims:

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61. The method of Claim 26, wherein said cleaving step is conducted under isothermal conditions.

62. The method of Claim 26, wherein said thermostable 5' nuclease comprises a 5' nuclease of a DNA polymerase.

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63. The method of Claim 62, wherein said DNA polymerase is *Taq* DNA polymerase.

64. The method of Claim 26, wherein said 3' portion of said second nucleic acid molecule comprises an aromatic ring.

65. The method of Claim 26, wherein said 3' portion of said second nucleic acid molecule comprises a 3' terminal nucleotide not complementary to said target nucleic acid.

66. The method of Claim 26, wherein said 3' portion of said second nucleic acid molecule consists of a single nucleotide.

67. The method of Claim 66, wherein said single nucleotide is not complementary to said target nucleic acid.

68. The method of Claim 66, wherein said single nucleotide is complementary to said target nucleic acid.

69. The method of Claim 65, wherein said 3' terminal nucleotide comprises a naturally occuring nucleotide.

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70. The method of Claim 65, wherein said 3' terminal nucleotide comprises a nucleotide analog.

71. The method of Claim 26, wherein a plurality of said first nucleic acid molecule is provided, such that said first nucleic acid molecule is in concentration excess compared to said target nucleic acid.

72. The method of Claim 26, wherein a plurality of said second nucleic acid molecule is provided, such that said second nucleic acid molecule is in concentration excess compared to said target nucleic acid.

73. The method of Claim 26, wherein said target nucleic acid and said second nucleic acid form a duplex, and wherein a plurality of said first nucleic acid is provided such that said first nucleic acid molecule is in concentration excess compared to said duplex.

74. The method of Claim 73, wherein said cleaving said cleavage structure comprises cleaving said first nucleic acid molecule to generate non-target cleavage product.

75. The method of Claim 74, wherein said non-target cleavage product from said first nucleic acid molecule is generated in concentration excess compared to said duplex.

76. The method of Claim 26, further comprising providing a third nucleic acid molecule complementary to a third portion of said target nucleic acid upstream of said first portion of said first target nucleic acid, wherein said cleavage structure comprises said third nucleic acid molecule.

REMARKS

In response to the pending Restriction Requirement, Applicants elect the claims in Group I, without traverse. New claims and amended claims associated with present amendment correspond to the subject matter of Group I. Applicants reserve the right to prosecute the cancelled claims (or similar claims) in the future (e.g., in one or more continuation or divisional applications). The present application is a continuation of U.S. 6,348,314 (09/350,309). A copy of the Form PTO-1449 from the parent application is enclosed herewith for consideration by the Examiner. Copies of the references associated with the Form PTO-1449 are contained in the file of the parent application for the Examiner's review.

Dated: January 17, 2003

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